

APPENDIX A

Contact information, programmatic organization,
and key responsibilities for SWAMP participant
agencies and organizations

QAMP Distribution List and Contact Information (from Section A3 of QAMP)

A copy of this QAMP, in hardcopy or in electronic format (preferably), is to be received and retained by at least one person from each participating entity. Names of SWAMP staff at each participating entity are shown below, as provided to the SWAMP QA Program to date. At least one person from each participating entity (names shown with asterisk*) shall be responsible for receiving, retaining, and distributing to their respective SWAMP staff within their own organization. Contact information for the primary SWAMP contact person for each participating organization is also provided below in Table 1. This information is also repeated in the main body of the QAMP for SWAMP, although information which follows herein provides a more detailed description of SWAMP Programmatic Organization and Responsibilities.

Table 1. Contact Information for the Primary SWAMP Contact Person for Each Participating Organization	
<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>STATE WATER RESOURCES CONTROL BOARD (SWRCB)</u>	
Valerie Connor*, Emilie Reyes,	SWRCB/Div. of Water Quality/TMDL Section/Assessment and TMDL Support Unit 1001 "I" St, 15th Floor; Sacramento, CA 95814 Phone: (916)-341-5573; Email: ConnV@dwq.swrcb.ca.gov
Del Rasmussen, George Nichol, Pam Wilson	
Bill Ray*	SWRCB/Div. of Water Quality/SWRCB QA Officer Sacramento, CA (address shown above) Phone: (916)-341-5583; Email: RayB@dwq.swrcb.ca.gov
Holly Sheridan*, Eric Burres, Revital Katznelson	SWRCB/Div. of Water Quality/Clean Water Team Sacramento, CA (address shown above) Phone: (916)-341-5466; Email: SherH@dwq.swrcb.ca.gov
<u>REGIONAL WATER QUALITY CONTROL BOARDS (RWQCB's)</u>	
Peter Otis*	RWQCB/Region 1 (North Coast Region) 5550 Skylane Blvd, Suite A; Santa Rosa, CA 95403 Phone: (707)-576-2662; Email: OtisP@rb1.swrcb.ca.gov
Karen Taberski*, Glynnis Collins, Matt Cover, Nelia White	RWQCB/Region 2 (San Francisco Bay Region) 1515 Clay St., Suite 1400; Oakland, Ca. 94612 Phone: (510) 622-2424; Email: KMT@rb2.swrcb.ca.gov

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<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>REGIONAL WATER QUALITY CONTROL BOARDS (RWQCB's)</u> (Continued)	
Karen Worcester*, Mary Adams	RWQCB/Region 3 (Central Coast Region) 81 Higuera St, Suite 200; San Luis Obispo, CA 93401-5427 Phone: (805)-549-3333; Email: KWorcest@rb3.swrcb.ca.gov
Tracy Vergets*, Jonathon Bishop, Michael Lyons, Shirley Birosik	RWQCB/Region 4 (Los Angeles Region) 320 W. Fourth St., Suite 200; Los Angeles, CA 90013 Phone: (213)-576-6661; Email: TVergets@rb4.swrcb.ca.gov
Dennis Heiman*, Guy Chetelat	RWQCB/Region 5-Redding (Central Valley Region) 415 Knollcrest Dr.; Redding, CA 96002 Phone: (530)-224-4845; Email: HeimanD@rb5r.swrcb.ca.gov
Jeanne Chilcotte*, Chad Dibble, Jay Rowan, Lori Webber, Robert Holmes	RWQCB/Region 5-Sacramento (Central Valley Region) 3443 Routier Rd., Suite A; Sacramento, CA 95827-3098 Phone: (916)-255-3088; Email: ChilcoJ@rb5s.swrcb.ca.gov
Annee Ferranti*	RWQCB/Region 5-Fresno (Central Valley Region) 1665 'E' Street, Suite 100, Fresno, CA 93706-2025 Phone: (559)-445-5576; Email: FerranA@rb5f.swrcb.ca.gov
Thomas Suk*, Jason Churchill, Laurie Scribe	RWQCB/Region 6 (Lahontan Region) 2501 Lake Tahoe Blvd., South Lake Tahoe, CA 96150 Phone: (530)-542-5419; Email: TSuk@rb6s.swrcb.ca.gov
Joan Stormo*, Maria Carpio-Obeso, Logan Raub	RWQCB/Region 7 (Colorado River Basin) 73-720 Fred Waring Dr., Ste. 100, Palm Desert, CA 92260 Phone: (760) 776-8982; Email: storj@rb7.swrcb.ca.gov

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<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>REGIONAL WATER QUALITY CONTROL BOARDS (RWQCB's)</u> (Continued)	
Pavlova Vitale*	RWQCB/Region 8 (Santa Ana Region) 3737 Main St., Suite 500, Riverside, CA 92501-3339 Phone: (909)-782-4920; Email: pvitale@rb8.swrcb.ca.gov
Jimmy Smith, David Gibson*, Linda Pardy, Bruce Posthumus	RWQCB/Region 9 (San Diego Region) 9174 Sky Park Ct., Ste. 100, San Diego, CA 92124-1324 Phone: (858) 467-4387; Email: gibsd@rb9.swrcb.ca.gov
<u>ORGANIZATIONS WITHIN MASTER CONTRACT TO CA DEPT FISH & GAME</u>	
Mark Stephenson, Gary Ichikawa*, Jon Goetzl, Witold Piekarski	California Department of Fish and Game Marine Pollution Studies Lab/Moss Landing NORTE 7711 Sandholdt Road, Moss Landing, CA 95039 Phone: (831)-771-4162 Email: gichikawa@mlml.calstate.edu
Max Puckett*	California Department of Fish and Game Marine Pollution Studies Laboratory/Granite Canyon c/o 4580 Blufftop Lane; Hydesville, CA 95547 Phone: (707)-768-1999; Email: granite@redshift.com
Dave Crane*, Abdu Mekebri, Kathleen Regelado, Bob Todd, Marida Martin	California Department of Fish and Game Fish & Wildlife Water Pollution Control Lab. 2005 Nimbus Road; Rancho Cordova, CA 95670 Phone: (916)-358-2859; Email: dcrane@ospr.dfg.ca.gov
Jim Harrington*, Peter Ode, Shawn McBride, Glenn Sibbald, Andy Rehn; Angie Montalvo	Calif. Dept. Fish and Game; Aquatic Bioassessment Lab. 2005 Nimbus Road; Sacramento, CA 95670 Phone: (916)-358-2862; Email: harringj@ospr.dfg.ca.gov

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<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>ORGANIZATIONS WITHIN MASTER CONTRACT TO CA DEPT FISH & GAME</u> (Continued)	
Karl Jacobs*	California Department of Water Resources Phone: (916)-227-0435; Email: kjacobs@water.ca.gov
Kenneth Coale, Russell Fairey*, Cassandra Roberts, Marco Sigala, Sean Mundell, Bettina Sohst, Autumn Bonnema, Bryan Frueh, Amy Byington, John Negrey	San Jose State University Foundation Moss Landing Marine Lab./Marine Pollution Studies Lab 7711 Sandholdt Road, Moss Landing, CA 95039 Phone: (831)-771-4161; Email: fairey@mlml.calstate.edu
Ron Tjeerdema, John Hunt*, Brian Anderson, Bryn Phillips, Patricia Nicely	Univ. of California, Davis, Granite Canyon Marine Lab. Environmental Toxicology Department 34500 Coast Highway One, Monterey, CA 95540 Phone: (831)-624-0947; Email: jwhunt@ucdavis.edu
Jennifer Rotnam*	California State University, Chico Research Foundation Bidwell Environmental Institute; Chico, CA 95929-0555 Phone: (530) 898-5205; Email: jrotnem@csuchico.edu
Larry Cooper*	South. CA Coastal Waters Research Proj. (SCCWRP) 7171 Fenwick Lane; Westminster, CA Phone: (714)-894-2222; Email: larryc@SCCWRP.org www.sccwrp.org
Bruce Thompson*	San Francisco Estuary Institute (SFEI) 7770 Pardee Lane, 2 nd Floor; Oakland, CA 94621-1424 Phone: (510)-746-7334; Email: brucet@sfei.org www.sfei.org

Table 1. Contact Information for the Primary SWAMP Contact Person for Each Participating Organization

<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>ORGANIZATIONS WITHIN MASTER CONTRACT TO CA DEPT FISH & GAME</u>	
(Continued)	
Michelle Gauthier*, Michael Miller, Beverly van Buuren	Frontier Geosciences, Inc 414 Pontius North; Seattle, WA 98109 Phone: (206)-622-6960 Email: michelleg@frontiergeosciences.com
Sandy Nurse*	Sierra Foothills Laboratory, Inc 255 Scottsville Blvd; Jackson, CA 95642 Phone: (209)-223-2800; Email: sfl@volcano.net
Kenneth Davis*	Applied Marine Sciences, Inc. 502 N. Highway 3, Suite B; League City, TX 77573 Phone: (281)-554-7272; Email: Kdavis1ams@aol.com
<u>MASTER CONTRACT TO U.S. GEOLOGICAL SURVEY</u>	
Jim Bowers*	U.S. Geological Survey 600 J Street-Placer Hall; Sacramento, CA 95819-6129 Email: JCBowers@usgs.gov
Paul Honeywell*, Gerald Rockwell	U.S. Geological Survey/Carnelian Bay Field Office P.O. Box 1360; Carnelian Bay, CA 96140 Phone: (530)-546-0187; Email: phoneywe@usgs.gov

Table 1. Contact Information for the Primary SWAMP Contact Person for Each Participating Organization

<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>RWQCB-DIRECT INDIVIDUAL SWAMP CONTRACTS</u>	
Patty Penner* (for RWQCB 1 & 2; their general R1 & R2 lab contracts providing some services for R1 & R2 for SWAMP)	Sequoia Analytical Laboratories, Inc 1455 N. McDowell Blvd. North, Suite D Petaluma, CA 94954 Phone: (707) 792-1865; Email: ppenner@sequoialabs.com www.sequoialabs.com
John Cantorna* (for RWQCB 3)	BC Laboratories, Inc. 4100 Atlas Court, Bakersfield, CA 93308 Phone: (661) 327-4911; Email: bclabs@bclabs.com
Orval Osborne* (for RWQCB 3)	Creek Environmental Laboratories, Inc. 141 Suburban Road, Suite C-5 San Luis Obispo, CA 93401 Phone: (805) 545-9838; Email: oosborne@fix.net
Jim Hawley*, Matt Rose (for RWQCB 5-Redding; and for RWQCB 1--R1's general lab contract providing some services for R1 for SWAMP)	Basic Laboratory, Inc. 2218 Railroad Ave.; Redding, CA 96001 Phone: (530) 243-7234; Email: mrose@basiclabinc.com www.basiclabinc.com
Leslie Mink* (for RWQCB 5-Redding)	Plumas Corporation P.O. Box 3880, Quincy, CA 95971 Phone: (530)-283-3739; Email: plumasco@psln.com www.feather-river-crm.org
Todd Sloat* (for RWQCB 5-Redding)	North. Calif. - Nevada Resource Conservation District Phone: (530)-336-5456; Email: tsloat@citlink.net

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<u>RWQCB-DIRECT INDIVIDUAL SWAMP CONTRACTS</u>	
(Continued)	
Victor deVlaming*, Linda Deanovic, Tom King, Ivy Jose (for RWQCB 5-Sacramento)	Univ. of California, Davis, Aquatic Toxicology Lab. Veterinary Medicine: APC; 1321 Haring Hall Davis, CA 95616-8732 Phone: (530) 754-7856; Email: vldevlaming@ucdavis.edu
William E. Elliot* (for RWQCB 5-Sacramento)	Twining Laboratories, Inc. 2527 Fresno St.; Fresno, CA 93716 Phone: (559) 268-7021; Email: Bille@twining.com
Jayna Kostura* (for RWQCB 5-Sacramento)	Weck Laboratories, Inc. 14859 East Clark Avenue; Industry, CA 91745 Phone: (626) 336-2139; Email: jkostura@wecklabs.com
Nancy Thiex* (for RWQCB 5-Sacramento)	South Dakota State University Olcarr E. Olson Biochemical Lab/Analytical Services Lab. P.O. Box 2170 133 ASC; South Dakota State University Brookings, SD 57007-1217 Phone: (605) 688-5466; Email: nancy_thiex@sdstate.edu
Sandy Nurse* (for RWQCB 5-Sacramento)	Sierra Foothills Laboratory, Inc 255 Scottsville Blvd; Jackson, CA 95642 Phone: (209)-223-2800; Email: sfl@volcano.net
Randy A. Dahlgren* (for RWQCB 5-Sacramento)	Univ. of California, Davis 1 Shields Avenue LAWR - Hoagland 151, Davis, CA 95616 Phone: (530) 752-2814; Email: radahlgren@ucdavis.edu

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<u>Name</u>	<u>Agency, Company, or Organization</u>
<u>RWQCB-DIRECT INDIVIDUAL SWAMP CONTRACTS</u> (Continued)	
Patricia Bucknell* (for RWQCB 5-Fresno)	Univ. of California, Davis, Aquatic Limnology Lab 1 Shields Avenue; Wickson Hall 3117, Davis, CA 95616 Phone: (530) 752-0353; Email: pjbucknell@ucdavis.edu
David Herbst* (for RWQCB 6)	Sierra Nevada Aquatic Research Laboratory (SNARL) University of California Route 1, Box 198; Mammoth Lakes, CA 93546 Phone: (760)935-4536; Email: herbst@lifesci.ucsb.edu
Dean Blinn* (for RWQCB 6)	UC SNARL subcontract for consulting services Northern Arizona University, Flagstaff, AZ
Mark Palmer* (for RWQCB 6)	High Sierra Water Lab PO Box 171; Truckee, CA 96160 Phone: (530)-582-8150; Email: HSWaterLab@aol.com
Michael Machuzak* (for RWQCB 8)	ABC Laboratories Phone: (805) 643-5621; Email: aquabio@pacbell.net
Rich Gossett* (for RWQCB 8)	CRG Marine Laboratories, Inc. 2020 Del Amo Blvd., Suite 200; Torrance, California 90501 Phone: (310)-533-5190; Email: info@crgmarinelabs.com www.crgmarinelabs.com

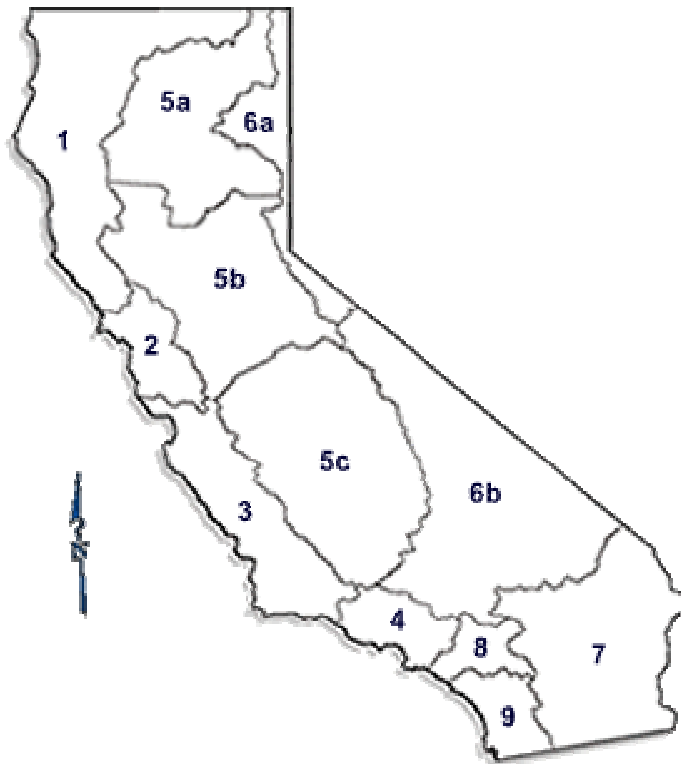
SWAMP Program Organization (expanding on Section A4 of the QAMP main body)

The SWAMP Program functions administratively under the leadership and auspices of the Assessment and TMDL Support Unit, within the TMDL Section of the Division of Water Quality at the California State Water Resources Control Board (SWRCB), and concurrently, is administered and managed regionally by SWAMP staff at the state's nine Regional Water Quality Control Boards (RWQCB's). The general mode of programmatic management and decision-making for administrative and technical issues is through consensus discussions that take place primarily at regular (bi-monthly) meetings of the SWAMP Roundtable. The Roundtable currently has representation from SWAMP staff at the SWRCB and all RWQCB's; representation from SWAMP staff from the California Department of Fish and Game, San Jose State University Foundation/Moss Landing Marine Laboratories, and the University of California-Davis/Granite Canyon Laboratory; and representation from the Morro Bay Foundation; and other agencies and organizations as desired and appropriate.

General Overview of the State Water Resources Control Board and the Regional Water Quality Control Boards

The SWRCB was created by the Legislature of the state of California in 1967. The overall mission of the SWRCB is to ensure the highest reasonable quality of waters of the state, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The SWRCB consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate. There are nine RWQCB's. The mission of the RWQCB's is to develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters, recognizing local differences in climate, topography, geology and hydrology. Figure 1 provides a map of the geographic areas of jurisdiction of each RWQCB in California. Each RWQCB has nine part-time members appointed by the Governor and confirmed by the Senate. RWQCB's develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality. The task of protecting and enforcing the many uses of water, including the needs of industry, agriculture, municipal districts, and the environment is an ongoing challenge for the SWRCB and RWQCB's.

Figure 1. Map of the nine California Regional Water Quality Control Board geographic areas of jurisdiction



- RWQCB 1 = North Coast Region**
RWQCB 2 = San Francisco Bay Region
RWQCB 3 = Central Coast Region
RWQCB 4 = Los Angeles Region
RWQCB 5 = Central Valley Region
 (5a) = Redding Office
 (5b) = Sacramento Office
 (5c) = Fresno Office
RWQCB 6 = Lahontan Region
 (6a) = South Lake Tahoe Office
 (6b) = Victorville Office
RWQCB 7 = Colorado River Basin Region
RWQCB 8 = Santa Ana Region
RWQCB 9 = San Diego Region

Overview of SWAMP-specific Program Organization

The primary functional organizational chart for the SWAMP program is shown in Figure 2, followed by organizational charts for SWAMP field and analytical laboratory contractual services in Figure 3 (California Department of Fish and Game Master Contract), Figure 4 (U.S. Geological Survey Master Contract), and Figure 5 (Contracts directly specified/administered by RWQCB's for SWAMP services).

RESPONSIBILITIES OF PRIMARY SWAMP STAFF AT PARTICIPATING ORGANIZATIONS

Contact information and organizational structure information was previously provided for key SWAMP staff at participating entities in Table 1, and in Figures 2 through Figure 5 on the following pages. Provided below is a narrative description of responsibilities of these primary SWAMP staff at participating organizations. Because of the very large number of agencies, organizations, and individuals involved in this SWAMP Program, this section provides a summary only, and for primary staff only. A summary chart of the major field, laboratory, administrative, and technical reporting activities of all participating SWAMP entities is provided in Table 2 at the end of this Appendix.

STATE WATER RESOURCES CONTROL BOARD

o State Water Resources Control Board: Primary SWAMP staff responsibilities

Val Connor, SWAMP Program Manager, SWRCB, Division of Water Quality, Sacramento, CA. Responsible for overall statewide SWAMP Program leadership and management. Has the ultimate decision-making authority for most routine matters of the SWAMP Program, but manages SWAMP with a consensus approach. Oversees activities of all SWRCB, RWQCB, and contractual SWAMP staff, and provides input and direction regarding SWAMP programmatic issues of both technical and non-technical nature. Provides liaison and communication between the PAG and the SWAMP Program. Provides input and direction to keep contract progress satisfactory and to resolve administrative and technical issues on SWAMP contracts. Responsible for ensuring that environmental activities are performed in accordance with applicable plans and procedures, work performance is measured against specifications, and appropriate management oversight and inspection is accomplished. Program managers are also responsible for improving systems relating to specific programs as well as ensuring deficient items and services are evaluated and controlled, root cause(s) of deficiencies and nonconformance are determined, and corrective actions are planned, implemented, and verified in a timely manner.

RESPONSIBILITIES OF PRIMARY SWAMP STAFF AT PARTICIPATING ORGANIZATIONS (Continued)

STATE WATER RESOURCES CONTROL BOARD (Continued)

Emilie Reyes, Del Rasmussen, and George Nichol, SWAMP SWRCB Scientific/Technical Coordinators, SWRCB, Division of Water Quality, Sacramento, CA. Responsible for general oversight of the SWAMP scientific and technical components, including review, comment, and advisory activities related to implementation of contracts, task orders, work products, and invoice reconciliation for the SWAMP Program. Monitor the effectiveness of program and project quality assurance activities. Monitor quality and technical training. Participate in the development, approval, implementation, and maintenance of written quality assurance and technical documents and plans (e.g., Standard Operating Procedures (SOP's), QAPP's, Special Studies, annual RWQCB Work Plans, Data Management Plan, and other guidance documents as appropriate). Prepare Agendas, Meeting Summaries, and conduct regular meetings of the Water Quality Monitoring Coordinating Committee (WQMCC). Prepare for and participate in an Annual SWAMP External Scientific Review Committee meeting and an annual SWAMP Scientific Summit, and other technical workshops and trainings as appropriate. Coordinate SWAMP monitoring activities and resulting data/product information with other agencies and organizations, as appropriate and practical. Serve as Program Manager's designated liaison for resolving technical and administrative issues related to management of the two SWAMP Master Contracts.

Bill Ray, SWRCB Quality Assurance Officer, Division of Water Quality, Sacramento, CA. Responsible for general oversight of all SWRCB activities that generate data and information. Not directly a SWAMP Program staffperson, but in his duties as the SWRCB QA Officer for statewide activities, will provide general oversight and assistance to the SWAMP QA Program in the interim, until such time that funding allows for the staffing of separate QA officials for SWAMP. Review and approve SWAMP QAMP to ensure program meets stated objectives and produces reliable data. Monitors quality and technical training.

Holly Sheridan (Sacramento), Revital Katznelson (Oakland), Eric Burres (Los Angeles): Responsible for managing and implementing the SWRCB Citizen Monitoring Program ("The Clean Water Team"). Coordinate and assist citizen monitoring efforts throughout the state, in conjunction with RWQCB staff and volunteers. Participate in SWAMP Program in order to provide link between RWQCB SWAMP staff and other SWRCB/RWQCB staff coordinating citizen monitoring programs throughout California. Participate in SWAMP meetings and workshops in an effort to promote standardizing and documenting methods and technologies between scientific staff conducting major monitoring efforts and citizen monitoring groups.

RESPONSIBILITIES OF PRIMARY SWAMP STAFF AT PARTICIPATING ORGANIZATIONS (Continued)

REGIONAL WATER QUALITY CONTROL BOARDS

o Regional Water Quality Control Boards: Primary SWAMP staff responsibilities

The environmental setting of the nine RWQCB's represents a broad and diverse array of geographic, hydrologic, geologic, biologic, and ecologic characteristics that define California's landscape, seascape, and eco-scape. Accordingly, the region-specific SWAMP goals and objectives, and the subsequent monitoring priorities and needs, are diverse and numerous at the nine RWQCB's throughout California. Likewise, there are varying levels of staff support and funding for SWAMP at the nine RWQCB's, and therefore, there are varying degrees of duties and responsibilities that befall the RWQCB SWAMP staff. There are dozens of RWQCB staff throughout the state who may not be listed in this QAPP and who may not be listed below that ARE providing extensive assistance to the efforts of their respective RWQCB's SWAMP Program. But, in an effort to provide only summary information, only the Primary RWQCB SWAMP contact person, as provided by each region, is listed by name below. This should not be construed as meaning that many other RWQCB SWAMP staff are not just as heavily involved in and significantly contributing to the SWAMP work in each RWQCB.

During the annual RWQCB SWAMP Work Plan preparation process, each RWQCB should prepare and maintain a separate organization chart for their SWAMP Program. At a minimum, RWQCB-specific organization charts should assign names to responsibilities for: 1) RWQCB Primary SWAMP staff contact (aka, the RWQCB SWAMP Project Manager); 2) RWQCB SWAMP QA Officer; 3) RWQCB SWAMP Data Officer; 4) RWQCB SWAMP Safety Officer; 5) RWQCB SWAMP Contract Manager(s), if applicable; 6) RWQCB SWAMP Lab Supervisor (if applicable); and 7) RWQCB SWAMP Field Supervisor (if applicable). It is acknowledged that due to limited resources and staff, several (or ALL in some cases) of these duties may indeed be the responsibility of the same person. It is also acknowledged that most SWAMP staff at most RWQCB's also have major responsibilities with other major programs within their respective RWQCB's. Nonetheless, the minimum information outlined above should be provided within the SWAMP RWQCB Work Plan each year. In addition, if a RWQCB is conducting its own field sample collection (or field data measurements, such as multiparameter probe measures, flow/discharge or velocity measures, etc.) for SWAMP, the names and duties of key participating staff should be provided within the SWAMP RWQCB organizational chart. Likewise, if a RWQCB is conducting its own analytical laboratory work for SWAMP, the names and duties of key participating staff should be provided. These same directives for preparing and updating organization charts each year apply to all entities conducting work for the SWAMP Program, whether another state agency, or a private commercial laboratory, or a University. A summary chart of the major field, laboratory, administrative, and reporting activities of all participating SWAMP entities, including RWQCB SWAMP staff, is provided in Table 2.

The basic responsibilities for each RWQCB staff are provided in the paragraph immediately below. As noted above, additional duties are likely in many cases, such as those RWQCB's conducting their own sample collection, or conducting some of their own minor laboratory analyses. Where this information is known, it is provided in the RWQCB-specific responsibilities briefly summarized further below.

Summary Description of Basic Responsibilities of RWQCB SWAMP Staff

Responsible for regional oversight and management of the SWAMP scientific and technical components, including review, comment, and advisory activities related to implementation of contracts, task orders, work products, and invoice reconciliation for the SWAMP Program. Monitor the effectiveness of program and region-specific project quality assurance activities. Monitor and participate in quality assurance training and technical training. Participate in the development, approval, implementation, and maintenance of written quality assurance and technical documents and plans (e.g., Standard Operating Procedures (SOP's), QAPP's (statewide and region-specific), Regional Special Studies, Annual RWQCB Work Plans, Data Reporting and Management, Interpretive Reporting, and other documents and reports as appropriate). Review Agendas, Meeting Summaries, and participate in regular meetings of the SWAMP Water Quality Monitoring Coordinating Committee (WQMCC). Prepare for and participate in an Annual SWAMP External Scientific Review Committee meeting and an annual SWAMP Scientific Summit, and other technical workshops and trainings as appropriate. Coordinate SWAMP monitoring activities and resulting data/product information with other agencies and organizations, as appropriate and practical.

For RWQCB staff conducting their own field and/or lab activities, or who manage contracts to other entities conducting SWAMP field and/or laboratory work, the following duties apply:

Responsible for performing field sampling and data processing duties in accordance with SWAMP SOP's, DQO's and this QAPP; and for reporting to SWAMP program manager, or designee, any deviation from SOP's or DQO's. As noted elsewhere throughout this document, every attempt shall be made to standardize to the extent possible and appropriate, but where following the recommended minimum standard protocols is not possible, and where there is good rationale for deviating from them, such deviations shall be documenting in writing and maintained in RWQCB records. Additionally, RWQCB staff responsible for conducting their own sample collection, or responsible for managing a contract for others whom are conducting sample collection or analytical laboratory services for them, shall maintain proper documentation of sampling events, sample preservation, sample shipment, and field procedures, except as contracted. In these cases, the designated RWQCB SWAMP staff will be the project manager for contract work and will oversee all work of other personnel involved in the project.

Peter Otis, RWQCB 1--North Coast Region, Santa Rosa, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct all field reconnaissance activities, all field sample collection (water samples), and all field data measurements, using RWQCB 1 staff, and contract student staff (as available).

Karen Taberski, RWQCB 2--San Francisco Bay Region, Oakland, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct all field reconnaissance activities, limited water sample collection activities (samples for bacterial analyses), and limited field data measurement activities (constant monitoring devices, etc.), using RWQCB 2 staff and contract student staff (as available).

Karen Worcester, RWQCB 3--Central Coast Region, San Luis Obispo, CA. Perform Basic RWQCB Responsibilities as outlined above. In addition to these basic duties, conduct all field reconnaissance activities, most field sample collection (conduct all water sample collection and bioassessment sample collection, but not sediment sample or tissue sample collection), and conduct all field data measurements, using RWQCB 3 staff, R3 contract student staff (as available), and R3 citizen volunteers (as available). As outlined above in RWQCB Basic Responsibilities, also manage all aspects of RWQCB-direct contracts for SWAMP analytical laboratory services, currently to: 1) BC Laboratories, and 2) Creek Environmental Laboratories.

Tracy Vergets, RWQCB 4--Los Angeles Region, Los Angeles, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct most field reconnaissance activities (except for EMAP-type bioassessment reconnaissance), conduct limited water sample collection activities (primarily numerous water samples for ELISA analysis, few water samples for TIE analysis, and possibly limited water samples for bacterial analysis), and plan to conduct limited field data measurement activities in the near future (constant monitoring devices, multiparameter probe measurements, etc.), using RWQCB 4 staff and contract student staff (as available).

Dennis Heiman, RWQCB 5--Central Valley Region (Redding Office), Redding, CA. Perform Basic RWQCB Responsibilities as outlined above. In addition to these basic duties, provide administrative and technical oversight and coordination for two RWQCB-direct contracts for SWAMP field sample collection and field data measurement activities, currently to: 1) Plumas Corporation (for Feather River CRMP watershed monitoring activities); and 2) Northern California-Nevada Resource Conservation District (for Pit River and other Upper Sacramento River tributary watershed monitoring activities). As outlined above in RWQCB Basic Responsibilities, also manage all aspects of the RWQCB-direct contract for SWAMP analytical laboratory services, currently to Basic Laboratories, Inc.

Jeanne Chilcotte, RWQCB 5--Central Valley Region (Sacramento Office), Sacramento, CA. Perform Basic RWQCB Responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities, most field sample collection and all field data

measurements (conduct all water sample collection, including automated samplers; bioassessment sample collection is conducted by U.C. Davis Aquatic Toxicology Laboratory Bioassessment Program staff; limited sediment sample collection is done by DFG contract field crews--although this will also be done by RWQCB staff starting in FY01-02; no tissue samples are collected for contaminant analysis currently), using RWQCB 5 staff, R5 contract student staff (as available), and R5 citizen volunteers (as available and appropriate), as well as staff from other coordinating agencies and organizations that are conducting joint monitoring programs with the RWQCB. As outlined above in RWQCB Basic Responsibilities, also manage all aspects of RWQCB-direct contracts for SWAMP field and analytical laboratory services, currently to: 1) U.C. Davis Aquatic Toxicology Laboratory; 2) Twining Laboratories, Inc.; 3) Weck Laboratories, Inc.; 4) South Dakota State University/Olsen Biochemical Laboratory; and 5) Sierra Foothills Laboratory, Inc.

Pam Buford, RWQCB 5--Central Valley Region (Fresno Office), Fresno, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities, limited water sample collection activities (samples for bacterial and other conventional water quality analyses), and limited field data measurement activities (multiprobe measurements, etc.), using RWQCB 5 staff and contract student staff (as available). As outlined above in RWQCB Basic Responsibilities, also manage all aspects of RWQCB-direct contract for SWAMP analytical laboratory services, currently to: 1) U.C. Davis Aquatic Limnology Laboratory; and 2) County of Madera Public Works Department.

Tom Suk, RWQCB 6--Lahontan Region (South Lake Tahoe Office), South Lake Tahoe, CA. Perform Basic RWQCB Responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities in conjunction with contractors, conduct limited field sample collection (water sample collection as possible, but most water sample collection is done by USGS Carnelian Bay contractors; bioassessment samples are collected by UC SNARL contractors; no sediment sample or tissue sample collection), and conduct limited field data measurements, as possible (again, this is mostly done by USGS Carnelian Bay contractors, as well as by UC SNARL contractors), using RWQCB 6 staff and R6 contract student staff (as available). As outlined above in RWQCB Basic Responsibilities, also manage all aspects of RWQCB-direct contracts for SWAMP field and analytical laboratory services, currently to: 1) USGS Carnelian Bay; 2) U.C. Sierra Nevada Aquatic Resources Laboratory (SNARL); 3) NEL Laboratories, Inc.; and 4) High Sierra Laboratories.

Joan Stormo, RWQCB 7--Colorado River Basin Region, Palm Desert, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities, using RWQCB 7 staff and contract student staff (as available).

Pavlova Vitale, RWQCB 8--Santa Ana Region, Riverside, CA. Perform Basic RWQCB Responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities, field sample collection and field data measurements (no tissue samples

are collected currently) using RWQCB 8 staff, R8 contract student staff (as available), and R8 citizen volunteers (as available and appropriate), as well as staff from other coordinating agencies and organizations that are conducting joint monitoring programs with the RWQCB. As outlined above in RWQCB Basic Responsibilities, also manage all aspects of RWQCB-direct contracts for SWAMP field and analytical laboratory services, currently to: 1) CRG Laboratories, Inc.; 2) ABC Laboratories, Inc.; and 3) Southern California Coastal Waters Research Project (SCCWRP).

David Gibson, RWQCB 9--San Diego Region, San Diego, CA. Perform basic RWQCB responsibilities as outlined above. In addition to these basic duties, conduct field reconnaissance activities, using RWQCB 7 staff and contract student staff (as available).

RESPONSIBILITIES OF PRIMARY SWAMP STAFF AT PARTICIPATING ORGANIZATIONS (Continued)

CALIFORNIA DEPARTMENT OF FISH AND GAME (DFG) MASTER CONTRACT

STATEWIDE SERVICES

SWAMP STATEWIDE TECHNICAL/SCIENTIFIC PLANNING AND ASSISTANCE SERVICES (FOR SWRCB AND ALL RWQCB'S)

o **California Department of Fish and Game: Primary SWAMP staff responsibilities**
Max Puckett, DFG Contract Manager for DFG Master Contract; Office of Spill Prevention and Response, DFG Moss Landing Marine Laboratory, c/o Hydesville, CA. Perform statewide technical/scientific planning and assistance services duties as described below.

o **San Jose State University Foundation (SJSUF)/Moss Landing Marine Laboratories (MLML): Primary SWAMP staff responsibilities**
Rusty Fairey, SJSUF/MLML Contract Manager for Subcontract from DFG to SJSUF/MLML, Moss Landing Marine Laboratories, Moss Landing, CA. Perform statewide technical/scientific planning and assistance services duties as described below.

o **University of California, Davis (UCD)/Granite Canyon Marine Laboratory: Primary SWAMP staff responsibilities**
John Hunt, UCD Contract Manager for Subcontract from DFG to UCD, Granite Canyon Marine Laboratory, Monterey, CA. Perform statewide technical/scientific planning and assistance services duties as described below.

Statewide SWAMP Technical/Scientific Planning and Assistance Services Staff

Responsibilities: Responsible for providing statewide technical assistance and scientific oversight to SWRCB and RWQCB SWAMP scientific, management, and technical staff, including planning, review, comment, and advisory activities related to implementation of SWAMP monitoring and analysis efforts. Maintain a thorough knowledge of program work activities, commitments, deliverables, and time frames; develop necessary lines of communication and good working relationships between the lead program staff and personnel of all participating agencies and organizations. Monitor and advise SWRCB and RWQCB SWAMP staff on the effectiveness of statewide programmatic monitoring, analysis and other technical/scientific activities. Conduct or assist in the conducting of, technical and training workshops, as necessary. Participate in the development, review, implementation, and maintenance of written technical documents and plans (e.g., Standard Operating Procedures (SOP's), QAPP's (statewide and region-specific), Regional Special Studies, annual RWQCB Work Plans, Data Reporting and Management, Interpretive Reporting, and other documents and reports as appropriate). Review Agendas, Meeting Summaries, and participate in regular meetings of the SWAMP Water Quality Monitoring Coordinating Committee (WQMCC).

Responsible for planning, conducting, and summarizing annual SWAMP External Scientific Review Committee meeting, and an annual SWAMP Scientific Summit, and other technical workshops and trainings as appropriate. Coordinate SWAMP monitoring activities and resulting data/product information with other agencies and organizations, as appropriate and practical.

SWAMP STATEWIDE QUALITY ASSURANCE PROGRAM (FOR SWRCB AND ALL RWQCB'S)

o California Department of Fish and Game: Primary SWAMP staff responsibilities

Max Puckett, DFG Contract Manager for DFG Master Contract, Office of Spill Prevention and Response, DFG Moss Landing Marine Laboratory, c/o Hydesville, CA. SWAMP Program Interim QA Co-Officer. Perform SWAMP Statewide Quality Assurance Program duties as outlined below. **Note:** Due to budgetary constraints at this time in the SWAMP Program, there is not a designated full-time dedicated SWAMP Program QA officer. However, in the interim, and until the future direction and funding levels are established for the SWAMP QA Program, DFG is fulfilling the role in an interim fashion, and in a very limited capacity.

Mark Stephenson, Director, DFG Marine Pollution Studies Laboratory, SWAMP Program Interim QA Co-Officer, Office of Spill Prevention and Response, Moss Landing Marine Laboratory, Moss Landing, CA. Perform SWAMP Statewide Quality Assurance Program duties as outlined below. **Note:** Due to budgetary constraints at this time in the SWAMP Program, there is not a designated full-time dedicated SWAMP Program QA officer. However, in the interim, and until the future direction and funding levels are established for the SWAMP QA Program, DFG is fulfilling the role in an interim fashion, and in a very limited capacity.

o Frontier Geosciences, Inc. (FGS): Primary SWAMP staff responsibilities

Michael Miller, FGS Contract Manager for subcontract from DFG/SJSUF to FGS, Referee QA Co-Officer (external 3rd party contractual services). **Note:** FGS is not yet contracted to conduct the duties as outlined below. Perform SWAMP Statewide Quality Assurance Program duties as outlined below. It is anticipated these duties will begin summer 2003.

Michelle Gauthier, FGS QA Officer, Referee QA Co-Officer (external 3rd party contractual services). Perform duties as outlined below. **Note:** FGS is not yet contracted to conduct the duties as outlined below. Perform SWAMP Statewide Quality Assurance Program duties as outlined below. It is anticipated these duties will begin summer 2003.

Note: The description below provides an outline of current and planned near-term staff-level responsibilities for the SWAMP QA Program. These duties are the minimum necessary for a program-level QA effort, but they are deficient in regards to what would be typical of a statewide QA Program for a large-scale, complex monitoring and analysis effort such as SWAMP. Typically, programs of this nature dedicate a minimum of 10-20% of monitoring and analysis program budgets to overall QA Program effort. At this time, however, there is not sufficient

staffing or funding to conduct such broad QA activities. However, as SWAMP evolves, these additional components, and the requisite staffing and funding, should become a part of the overall SWAMP statewide QA Program. Until such time, the following paragraph provides a description of the initial Statewide SWAMP QA Program staff-level responsibilities:

Statewide SWAMP QA Program Staff Responsibilities: Maintain a thorough knowledge of program work activities, commitments, deliverables, and time frames; develop necessary lines of communication and good working relationships between the lead program staff and personnel of all participating agencies and organizations, focusing on lab and field staff; continued refinement and movement towards standardization of recommended methods and SOP's for field sample collection and laboratory analyses; continued refinement of the QAPP itself, through the development of a SWAMP Field Procedures Manual; continued centralized collection of all protocols in written and electronic format, for all procedures used in SWAMP; continued review of the need for, and frequency of, various types of field QC samples/analysis; management and coordination of subcontract to external 3rd party referee QA program staff at Frontier Geosciences (which will have primary responsibility for conducting the SWAMP "External QA Program"--see description of 3rd party referee QA Program responsibilities below); provide oversight and assistance to External QA Program efforts; maintain communications with all SWAMP participants regarding SWAMP QA Program on a regular basis, and inform SWRCB SWAMP management of QA Program efforts and issues as needed and as appropriate; elevate problems and issues requiring resolution to the SWAMP Program Manager or designee(s), for disposition, when appropriate; notify SWAMP participants of specific circumstances which may adversely affect quality of data derived from analysis of field samples.

Statewide SWAMP QA Program Staff Responsibilities for External QA Program (to be implemented by FGS, via subcontract from DFG/SJSUF): Assist in implementation of statewide SWAMP QA Program, as described above. In addition, develop and implement a 3rd party, external QA Program which will provide for staffing and materials necessary for the conducting of an annual SWAMP Interlaboratory Calibration Exercise Program (mandatory for all participating SWAMP labs), including purchase/preparation of, and distribution of, interlaboratory samples (with written instructions on procedures for analyzing and reporting) to all SWAMP labs for analysis. A written summary of the annual interlaboratory calibration exercise findings will be prepared and reviewed with SWAMP Program Management, as well as with laboratory staff, prior to overall distribution to all participants. Prepare annual summary report of findings of SWAMP 5% field duplicate analysis program, and review with SWAMP program participants as applicable. Assist with conducting, and provide oversight for, SWAMP field and laboratory performance audits and other QA checks, including providing written summaries of performance audits. Provide SWAMP external QA Program summary presentation (and provide annual written summary report) during annual SWAMP Scientific Summit and External Scientific Planning and Review Committee meetings; consult as necessary regarding technical QA issues.

SWAMP STATEWIDE DATA MANAGEMENT PROGRAM (FOR SWRCB AND ALL RWQCB'S)

o San Jose State University Foundation (SJSUF)/Moss Landing Marine Laboratories (MLML): Primary SWAMP staff responsibilities

Rusty Fairey, SJSUF/MLML Contract Manager for Subcontract from DFG to SJSUF, and SWAMP Statewide Data QA Coordinator; Moss Landing Marine Laboratories (San Jose State University Foundation), Moss Landing, CA. Perform SWAMP Data Management Program duties as described below.

In addition, as the SWAMP Statewide Data QA Coordinator, specifically responsible for overseeing quality assurance statewide during migration of raw data from generators to final data in the SWAMP database.

Cassandra Roberts, SWAMP Statewide Information Management (IM) Coordinator, and Regional IM Coordinator (RIMC)- Northern and Central California; Moss Landing Marine Laboratories (San Jose State University Foundation), Moss Landing, CA. Perform SWAMP Data Management Program duties as described below.

In addition, as SWAMP Statewide IM Coordinator, specifically responsible for working with Regional IM Coordinators to develop SDTP, and for creation and management of the centralized SWAMP database; as SWAMP Regional IM Coordinator for Northern and Central California, specifically responsible for compiling all data generated within those regions of the state into a unified SWAMP database.

o Southern California Cooperative Water Research Project (SCCWRP): Primary SWAMP staff responsibilities

Larry Cooper, Regional IM Coordinator (RIMC)-- Southern California; Southern California Coastal Waters Research Project (SCCWRP), Westminster, CA. Perform SWAMP Data Management Program duties as described below.

In addition, as Regional IM Coordinator for Southern California, specifically responsible for compiling all data generated within that region of the state into a unified SWAMP database.

o San Francisco Estuary Institute: Primary SWAMP staff responsibilities

Bruce Thompson, Regional IM Co-Coordinator (RIMC)--California Central Valley, San Francisco Estuary Institute, Richmond, CA. Perform SWAMP Data Management Program duties as described below.

In addition, as Regional IM Coordinator for the California Central Valley, specifically responsible for compiling all data generated within that region of the state into a unified SWAMP database.

o California Department of Water Resources: Primary SWAMP staff responsibilities

Karl Jacobs, Regional IM Co-Coordinator (RIMC)--California Central Valley, California Department of Water Resources, Sacramento, CA. Perform SWAMP Data Management Program duties as described below.

In addition, as Regional IM Coordinator for the California Central Valley, specifically responsible for compiling all data generated within that region of the state into a unified SWAMP database.

Statewide SWAMP Data Management Program Staff Responsibilities: Information management needs to occur on several levels. First, a process must be developed to ensure the quality, compatibility, and timeliness of the data each organization collects. Once collected and organized, it must be readily available to the Regional Board Staff (RBS) and technical committees for review, analysis and interpretation. Ultimately, this information will be made available to other interested organizations and the general public. The SWAMP Data Management Program staff are responsible for the development of the SWAMP Information Management System (SIMS), will support data capture and reporting during the initiation of SWAMP. The SIMS Plan focuses on development of four major functions of the SWAMP IMS: 1) Development of the standard protocols each participating agency or laboratory will use to transfer data from their internal data generators to the SWAMP IMS; 2) Development of the process by which data will be submitted to the SWAMP data managers, including the path and quality control procedures the data will follow until it has been accepted; 3) Development of the technical specification (guidelines) of how the data will be organized in the SWAMP database; 4) Development of the milestones and mechanisms by which the data will be made accessible to project participants, other organizations, and the general public. In order to accomplish the development and implementation of the SWAMP IMS, the following general duties will also be the responsibility of SWAMP Data Management Program staff: Coordinate with SWAMP program agencies and organizations on data management needs; ensure that submitted site locations, parameter codes, sample data results, and data corrections are correctly entered into the SWAMP database; train SWAMP staff on procedures for submitting site locations, parameter codes, sample data results, and data corrections; train SWAMP staff to use the SWAMP database; update the SWAMP Information Management System Plan as appropriate.

RESPONSIBILITIES OF PRIMARY SWAMP STAFF AT PARTICIPATING ORGANIZATIONS (Continued)

SWAMP ORGANIZATIONS PROVIDING CONTRACT SERVICES FOR FIELD AND/OR LABORATORY ACTIVITIES

Note: Approximately 10% of SWAMP contract funding is dedicated towards the Statewide Services described in the last several pages (SWAMP Statewide Technical/Scientific Planning and Assistance Services; SWAMP Statewide Quality Assurance Program and External QA Program; and the SWAMP Data Management Program), all administered and coordinated by the DFG Master Contract from the SWRCB. The vast majority of SWAMP contract funding (approximately 90%) is dedicated towards SWAMP agencies and organizations that are providing contract services for field activities and laboratory analyses.

The specific work to be performed by each of the entities listed below is provided in the annual SWAMP RWQCB Work Plans for FY02-03, and is also available in the contract text for each SWAMP agency and organization listed below. A summary chart of the major field, laboratory, administrative, and reporting activities of all participating SWAMP entities, including SWAMP contractors, is provided in Table 2 within this Appendix.

The primary goal of providing the information below is to ensure that each organization provides minimal input regarding who is responsible for ensuring that the SWAMP QAPP provisions are followed. As with all other SWAMP participants, including the SWRCB and RWQCB's, each year, every SWAMP contractor should prepare, maintain, and update as necessary a separate organization chart for their respective SWAMP contractual agency or organization. At a minimum, these organization charts should assign names and responsibilities for: 1) Primary Contractor SWAMP staff contact (aka, the Contractor SWAMP Project Manager); 2) Contractor SWAMP QA Officer; 3) Contractor SWAMP Data Officer; 4) Contractor SWAMP Contract Manager; 5) Contractor SWAMP Safety Officer; 6) Contractor SWAMP Laboratory Supervisor (if applicable); and 7) Contractor Field Supervisor (if applicable). *It is acknowledged that due to limited resources and staff, several of these duties may indeed be the responsibility of the same person.* It is also acknowledged that most SWAMP staff at most Contractor entities also have major responsibilities with other major programs within their respective agency or organization. Nonetheless, the minimum information outlined above should be provided, maintained, and updated as necessary for SWAMP field and laboratory contractual activities each year.

General Description of Responsibilities of Management Staff of SWAMP Organizations Providing Contract Field and/or Laboratory Services

Responsible for all aspects and functions of the respective field activities and lab analyses, ensuring proper field and analytical data verification and documentation. Ensure use of USEPA approved analytical lab procedures, or revised and approved alternate standard analytical lab methods. Ensure adherence to minimum standards in this QAPP and any relevant QA

documents of the contract lab or organization conducting lab and field activities. Coordinates with SWAMP program manager, or designee, and QA specialist in establishing DQOs; reports deviations from DQOs; and assists in implementing corrective action. Ensures timely and accurate delivery of specified products, as well as timely and accurate completion of field and lab activities. Responsible for overall health and safety training and supervision of field and laboratory staff, and ensuring that field and lab staff conduct all operations in a safe and effective manner.

General Description of Responsibilities of Field and/or Laboratory Staff of SWAMP Organizations Providing Contract Field and Laboratory Services

Responsible for performing field sample collection and field data measurement activities; responsible for field and lab analyses and data processing duties according to guidelines included in the SWAMP QAPP and the contract agency or organization's QA manual, policies, and procedures. Responsible for implementing and maintaining internal quality control, and for notifying the field and/or laboratory supervisor of anomalous or erroneous field activities and/or lab analytical results. Responsible for documenting use of field and/or lab SOPs, documentation of calibration and maintenance of field and/or lab equipment, as well as documentation of all other field and/or lab activities. Responsible for participating in, and complying with, health and safety training, as well as technical training, for field and lab activities, and ensuring that all field and lab operations are conducted in a safe and effective manner. Responsible for completing work in a timely and accurate manner, and for providing field and/or lab management staff with updates of any problems or issues which arise during performance of field and/or lab activities.

CALIFORNIA DEPARTMENT OF FISH AND GAME (DFG) MASTER CONTRACT

Note: Only field and laboratory activities are shown below for the DFG Master Contract and associated DFG Subcontracts. DFG Master Contract statewide activities were described in previous pages. Field and laboratory activities are currently being conducted through the DFG Master Contract for RWQCB's 1, 2, 3, 4, 5, 7, and 9, as well as for the SWRCB's DWQ. See Table 2.

o California Department of Fish and Game Laboratories and Offices Moss Landing Marine Laboratories, Moss Landing, CA

In addition to conducting statewide services previously described in prior pages, all contract oversight, management, and coordination is provided by DFG SWAMP staff out of the Moss Landing office. This includes supervision, management, and coordination of all lab and field activities conducted, as outlined below, by the three (currently) major subcontractors within the DFG Master Contract (San Jose State University Foundation/Moss Landing Marine Laboratory; UC Davis/Granite Canyon Marine Laboratory; and California State University, Chico Research Foundation). In addition to these overall contractual management and coordination duties, DFG Moss Landing staff also assist SJSUF Moss Landing SWAMP subcontract staff to conduct field

sample collection and field data measurement activities (all media); conduct trace metal chemistry laboratory analyses (all media); and other field and lab sample collection, processing, analysis and reporting activities.

Max Puckett: DFG Contract/Program Manager for DFG Master Contract; Primary overall DFG SWAMP contact for DFG Master Contract.

Mark Stephenson: Laboratory Supervisor; Laboratory QA Officer.

Gary Ichikawa: Primary Laboratory SWAMP Contact; Field Activities Supervisor; Field QA Officer.

Jon Goetzl: Lead Laboratory Analyst--Trace Metals Analysis; Laboratory Safety Officer; Laboratory Data Officer.

Fish and Wildlife Water Pollution Control Laboratory, Rancho Cordova, CA

Conduct laboratory analyses for all synthetic organic analytes, conventional constituents in water, and several specialized trace metals analyses

Dave Crane: Primary Laboratory SWAMP Contact; Laboratory Supervisor; Laboratory QA Officer.

Abdu Mekebri: Lead Laboratory Analyst--Organics: Pesticides,

Kathleen Regelado: PCB's/arochlors

Marida Martin: Lead Laboratory Analyst--Conventional Constituents.

Bob Todd: Lead Laboratory Analyst--Organics: PAH's, Volatiles, Semi-volatiles; Laboratory Data Officer.

Aquatic Bioassessment Laboratory, Rancho Cordova, CA

Conduct directly, and/or provide management, supervision, and coordination of subcontract to Chico State University for conducting, field reconnaissance, field sample collection, field data measurements, and laboratory analysis (sorting, taxonomy, counting, QA, reporting) for SWAMP biological assessment samples.

Jim Harrington: Primary Laboratory SWAMP Contact; Laboratory Supervisor.

Pete Ode: Lead Laboratory Analyst--taxonomy; Laboratory Data Officer.

Andy Rehn: Laboratory QA Officer; Laboratory Safety Officer.

Shawn McBride: Field Reconnaissance and Collection Co-Supervisor.

Mike Peterson: Field Reconnaissance and Collection Co-Supervisor.

o San Jose State University Foundation (SJSUF)/Moss Landing Marine Laboratories (MLML)

Moss Landing Marine Laboratories, Moss Landing, CA

In addition to conducting statewide services previously described in prior pages (statewide technical/scientific planning and assistance services, statewide data management program activities), conduct field sample collection and field data measurement activities (all media); conduct trace metal chemistry laboratory analyses (all media); and other field and lab sample collection, processing, analysis and reporting activities--in conjunction with and coordination with DFG Moss Landing SWAMP staff.

Rusty Fairey: SJSUF/MLML Contract Manager for SWAMP Subcontract from DFG to SJSUF/MLML; Primary Laboratory SWAMP contact; Overall Laboratory Supervisor

Lauri Park: Laboratory Fiscal and Administrative Services Supervisor

Cassandra Roberts: Laboratory Data Supervisor; Laboratory Safety Officer

Marco Sigala: Field and Laboratory Activities Logistics Supervisor

Autumn Bonnema: Analytical Laboratory Supervisor; Laboratory QA Officer

Bettina Sohst: Field Collection Land Crew Co-Supervisor

Sean Mundell: Field Collection Land Crew Co-Supervisor

Bryan Frueh: Field Collection Boat Crew Co-Supervisor

John Negrey: Field Collection Boat Crew Co-Supervisor

The following labs provide SWAMP analytical services through subcontract from SJSUF/MLML:

o Sierra Foothills Laboratory, Inc., Jackson, CA--laboratory services only (Chlorophyll-a intermittently; Boron)

Sandy Nurse: Laboratory Primary SWAMP contact.

o Applied Marine Sciences, Inc., League City, TX--laboratory services only (sed grain size, sed TOC, water DOC and TOC, water TSS, water SSC)

Kenneth Davis: Laboratory Primary SWAMP contact.

o E.S. Babcock and Sons, Inc., Riverside, CA--laboratory services only (bacteriology and conventional water quality constituents)

o University of California, Davis (UCD)/Granite Canyon Marine Laboratory Granite Canyon Marine Laboratory, Monterey, CA

In addition to conducting statewide services previously described in prior pages (statewide technical/scientific planning and assistance services), conduct laboratory toxicity testing (all media); and other field and lab sample collection, processing, analysis and reporting activities--

in conjunction with and coordination with DFG Moss Landing SWAMP staff. Also purchase equipment for SWAMP agencies and organizations to conduct field and other activities.

John Hunt: UCD Contract Manager for SWAMP Subcontract from DFG to UCD, Granite Canyon Marine Laboratory; Primary Laboratory SWAMP contact; Laboratory Co-Supervisor.

Brian Anderson: Laboratory Co-Supervisor.

Bryn Phillips: Laboratory Lead Analyst--Toxicity Testing; Laboratory Data Officer.

Patty Nicely: Laboratory QA Officer; Laboratory Safety Officer.

o California State University, Chico Research Foundation, Chico, CA

In conjunction with, and coordination with, DFG Aquatic Bioassessment Laboratory staff, conduct field reconnaissance, field sample collection, field data measurements, and laboratory analysis (sorting, taxonomy, counting, QA, reporting) for SWAMP biological assessment samples.

Jennifer Rotnam: Primary Laboratory SWAMP contact; Laboratory Supervisor.

**SWAMP ORGANIZATIONS PROVIDING CONTRACT SERVICES
FOR FIELD AND/OR LABORATORY ACTIVITIES (continued)**

U.S. GEOLOGICAL SURVEY (USGS) MASTER CONTRACT

Note: Field and laboratory activities are currently being conducted through the USGS Master Contract for RWQCB's 1, 6, and 7. See Table 2.

o U.S. Geological Survey Master Contract

Contract administration and overall coordination and oversight for the USGS Master Contract for SWAMP is conducted by USGS Water Resources Division staff in Sacramento, CA. Field sample collection is conducted by USGS Field Office staff in Carnelian Bay, CA (see below), and USGS Field Office staff in San Diego, CA (see below). Most laboratory analyses conducted by the USGS National Water Quality Laboratory, Denver, CO; sediment analyses (such as SSC) conducted by the USGS Marina, CA Field Office Sediment Laboratory. Other types of work USGS may conduct include stream gage installation, maintenance, and reporting; assistance with flow/discharge measurements and overall water supply issues; sedimentation/erosion studies; etc.

USGS Water Resources Division Office, Sacramento, CA

Contract administration and overall coordination and oversight for the USGS Master Contract for SWAMP.

Jim Bowers: USGS Contract Manager for SWAMP Master Contract from SWRCB to USGS; Primary SWAMP Contact for USGS Master Contract.

USGS Field Office, Carnelian Bay, CA

Conduct field water sample collection and sample processing activities, field data measurements (multiparameter probe measures, flow/discharge measures, etc.) for RWQCB6.

Paul Honeywell: Primary Contact for USGS Carnelian Bay SWAMP services.

USGS Field Office, San Diego, CA

Conduct various field and/or lab activities for SWAMP for RWQCB 7. Specifics not known at this time.

Not known at this time: Primary Contact for USGS San Diego SWAMP services.

**RWQCB-DIRECT INDIVIDUAL SWAMP CONTRACTS
(for SWAMP Field and/or Laboratory Activities)**

Note: Each of the individuals listed below is the primary SWAMP contact (the Contractor SWAMP Program Manager), for each SWAMP Contract Agency or Organization conducted field and/or laboratory activities for specific RWQCB's. Organizational Charts are available from each SWAMP Contract Agency or Organization conducting field and/or laboratory activities for SWAMP for specific RWQCB's. See Table 2 at the end of this Appendix.

- o **Sequoia Analytical Laboratories, Inc., Petaluma, CA and Walnut Creek, CA (for RWQCB 1 and 2)--laboratory services only**
Patty Penner
- o **BC Laboratories, Inc., Bakersfield, CA (for RWQCB 3)--laboratory services only**
Aileen Cantorna
- o **Creek Environmental Laboratories, San Luis Obispo, CA (for RWQCB 3)--laboratory services only**
Orval Osborne
- o **Basic Laboratory, Inc., Redding, CA (for RWQCB 5-Redding and for RWQCB 1)--laboratory services only**
Jim Hawley
- o **Northern California-Nevada Resource Conservation District, Quincy, CA (for RWQCB 5-Redding)--field, laboratory, and other technical planning/coordination services**
Todd Sloat
- o **Plumas Corporation, Quincy, CA (for RWQCB 5-Redding)--field, laboratory, and other technical planning/coordination services**
Leslie Mink
- o **University of California, Davis/Aquatic Toxicity Laboratory, Davis, CA (for RWQCB 5-Sacramento)--field, laboratory, and other technical planning/coordination services**
Victor deVlaming
- o **Sierra Foothills Lab, Jackson, CA (for RWQCB 5-Sacramento)--laboratory services only**
Sandy Nurse

- o Twining Laboratories, Inc., Fresno, CA (for RWQCB 5-Sacramento)--laboratory services only
William Elliot
- o Weck Laboratories, Industry, CA (for RWQCB 5-Sacramento)--laboratory services only
Jayna Kostura
- o South Dakota State University, Oscar Olsen Biochemistry Lab/Analytical Services Lab, Brookings, SD (for RWQCB 5-Sacramento)--laboratory services only
Nancy Thies
- o University of California, Davis/LAWR, Davis, CA (for RWQCB 5-Sacramento)--laboratory services only
Randy Dahlgreen
- o University of California, Davis/Aquatic Limnology Laboratory, Davis, CA (for RWQCB 5-Fresno)--laboratory services only
Patty Bucknell
- o University of California, Santa Barbara/Sierra-Nevada Aquatic Resources Laboratory (UC SNARL), Mammoth Lakes, CA (for RWQCB 6)--field, laboratory, and other technical planning/coordination services
Dave Herbst
- o Dean Blinn, Northern Arizona University, Flagstaff AZ (for RWQCB 6, via subcontract from UC SNARL)--laboratory services only
Dean Blinn
- o High Sierra Water Laboratories, Inc., Truckee, CA (for RWQCB 6)--laboratory services only
Mark Palmer
- o ABC Laboratories, Inc., Ventura, CA (for RWQCB 8)--field, laboratory, and other technical planning/coordination services
Mike Machusak
- o CRG Laboratories, Inc., Torrance, CA (for RWQCB 8)--field, laboratory, and other technical planning/coordination services
Rich Gossett

Table 2a. Summary of SWAMP Field Activity Responsibilities for Organizations Conducting Statewide Services and for RWQCB 1 and 2

Entity for whom service is being conducted	Agency, University, Corporation, or Other Entity Conducting Service (and showing contract "route" where can)	FIELD SAMPLE COLLECTION AND FIELD DATA MEASUREMENTS									
		Sample Collection					Pre-collect	Probe	Flow/veloc	Phys Habit	
		Water	Sed	Tiss	Benth	Bugs	site recon	measure	measure	Assess	
State Water Resources Control Board--Statewide Services											
Organizations providing services for SWAMP statewide (services for all regions)	CDFG--statewide planning assistance, including technical workshops, WQMCC meetings, and SPARC meetings, statewide QA planning/QA oversight										
	CDFG/SJSUF--statewide planning assistance, including technical workshops, WQMCC meetings, and SPARC meetings										
	CDFG/UCD Granite Cyn--statewide planning assistance, including technical workshops, WQMCC meetings, and SPARC meetings										
	CDFG/SJSUF--statewide data mgmt										
	CDFG/SJSUF/SCCWRP--social data mgmt										
	CDFG/SJSUF/SFEI--centvall data mgmt										
	CDFG/SJSUF/Frontier Geo--ext QA										
	CDFG/SJSUF/Don Stevens--stats										
North Coast Regional Water Quality Control Board											
RWQCB 1: North Coast Region	R1 staff	1					1	1	1	1	
	R1 student contract staff										
	R1 citizen monitors										
	CDFG Nimbus--Organics										
	CDFG Nimbus--Conv WQ										
	CDFG/SJSUF--Metals										
	CDFG Nimbus/CSU Chico--ABL Bioassess					1	1	1	1	1	
	CDFG/SJSUF/Applied Mar. Sci.--conv wq										
	CDFG/SJSUF/Sierra Foothills--conv wq										
	SWRCB/Sequoia Analytical										
	SWRCB/North Coast Labs										
SWRCB/Basic Laboratory											
USGS								stream gage			
San Francisco Bay Regional Water Quality Control Board											
RWQCB 2: San Francisco Bay Region	R2 staff	1					1	1	1	1	
	R2 student contract staff						1	1	1	1	
	R2 citizen monitors						1	1	1	1	
	CDFG Nimbus--Organics										
	CDFG Nimbus--Conv WQ										
	CDFG/SJSUF--Metals										
	CDFG Nimbus/CSU Chico--ABL Bioassess					1	1	1	1	1	
	CDFG/SJSUF--Sample Collection	1	1	1				1	1		
	CDFG/UCD Granite Cyn--Tox Testing										
	CDFG/SJSUF/Applied Mar. Sci.--conv wq										
	CDFG/SJSUF/Sierra Foothills--conv wq										
SWRCB/Sequoia Analytical--bact											

Table 2b. Summary of SWAMP Laboratory, Administrative, and Technical Reporting Responsibilities for Organizations Conducting Statewide Services and for RWQCB 1 and 2

[illegible]

[illegible]

Table 2d. Summary of SWAMP Laboratory, Administrative, and Technical Reporting Responsibilities for RWQCB 3, 4, and 5

Entity for whom service is being conducted	Agency, University, Corporation, or Other Entity Conducting Service (and showing contract "route" where can)	ANALYTICAL LABORATORY SERVICES									Other services (QA, Data Mgmt, Stats, Interp Rept)
		Org	Metal	Convent	Tox	Benthic	Biolog	Bact/	Sed		
		Chem	Chem	W.Q.	Test	Infauna	Assess	Path	charac		
Central Coast Regional Water Quality Control Board											
RWQCB 3: Central Coast Region	R3 staff									1	
	R3 student contract staff										
	R3 citizen monitors										
	CDFG Nimbus--Organics	1									
	CDFG/SJSUF--Metals		1								
	CDFG Nimbus/CSU Chico--ABL Bioassess						1			1	
	CDFG/SJSUF--Sample Collection										
	CDFG/UCD Granite Cyn--Tox Testing				1					1	
	CDFG/SJSUF/Applied Mar. Sci.--conv wq			1					1		
SWRCB/Creek Laboratory			1				1				
SWRCB/BC Labs	1	1	1				1				
Los Angeles Regional Water Quality Control Board											
RWQCB 4: Los Angeles Region	R4 staff									1	
	R4 student contract staff										
	R4 citizen monitors										
	CDFG Nimbus--Organics	1									
	CDFG Nimbus--Conv WQ			1							
	CDFG/SJSUF--Metals		1								
	CDFG Nimbus/CSU Chico--ABL Bioassess						1			1	
	CDFG/SJSUF--Sample Collection										
	CDFG/UCD Granite Cyn--Tox Testing				1					1	
CDFG/SJSUF/Applied Mar. Sci.--conv wq			1					1			
CDFG/SJSUF/Sierra Foothills--conv wq			1								
Central Valley Regional Water Quality Control Board											
RWQCB 5: Central Valley Region	R5 staff			1				1		1	
	R5 student contract staff			1				1			
	R5 citizen monitors										
	CDFG/MLML/SJS Sample Collection										
	CDFG/UCD/Granite Cyn Tox Testing				1						
	CDFG/SJS/Applied Marine Sciences								1		
	SWRCB/UC Davis - Aquatic Toxicology Lab				1		1			1	
	SWRCB/UC Davis - LAWR	1		1							
	SWRCB/UC Davis - Aquatic Limnology Lab			1							
	SWRCB/Plumas Corporation			1					1		
	SWRCB/Northern Cal-Nevada RCD			1					1		
	SWRCB/Twining Laboratories	1	1	1					1		
	SWRCB/Weck Laboratories		1								
	SWRCB/Basic Laboratory	1	1	1				1			
	SWRCB/So. Dakota St. Univ.--Olsen Chem Lab	1	1	1							
	SWRCB/Countyof Madera--Public Wks										
	SWRCB/Sierra Foothill Laboratory			1				1			

Table 2e. Summary of SWAMP Field Activity Responsibilities for Organizations Conducting Statewide Services and for RWQCB 6, 7, 8, 9 and DWQ

Entity for whom service is being conducted	Agency, University, Corporation, or Other Entity Conducting Service (and showing contract "route" where can)	FIELD SAMPLE COLLECTION AND FIELD DATA MEASUREMENTS								
		Sample Collection					Pre-collect site recon	Probe measure	Flow/veloc measure	Phys Habi Assess
		Water	Sed	Tiss	Benth	Bugs				
Lahontan Regional Water Quality Control Board										
RWQCB 6: Lahontan Region	R6 staff	1				1	1	1	1	
	R6 student contract staff									
	R6 citizen monitors									
	USGS--Carnelian Bay	1					1	1	1	
	SWRCB/UC Santa Barbara-SNARL					1	1	1	1	
	SWRCB/NEL Lab									
	SWRCB/High Sierra Labs									
SWRCB/Desert Research Institute										
Colorado River Basin Regional Water Quality Control Board										
RWQCB 7: Colorado River Basin Region	R7 staff	1					1	1	1	1
	R7 student contract staff									
	R7 citizen monitors									
	CDFG Nimbus--Organics									
	CDFG Nimbus--Conv WQ									
	CDFG/SJSUF--Metals									
	CDFG Nimbus/CSU Chico--ABL Bioassess									1
	CDFG/SJSUF--Sample Collection	1	1					1	1	
	CDFG/UCD Granite Cyn--Tox Testing									
	CDFG/SJSUF/Applied Mar. Sci.--conv wq									
	CDFG/SJS/Babcock & Sons, Inc.									
CDFG/SJSUF--Sierra Foothills conv wq										
USGS-San Diego		1	1					1	1	
Santa Ana Regional Water Quality Control Board										
RWQCB 8: Santa Ana Region	R8 staff	1	1		1		1	1		1
	R8 student contract staff									
	R8 citizen monitors	1			1		1	1		1
	SWRCB/ABC Labs				1		1	1		1
	SWRCB/CRG Labs	1	1				1	1		1
	SWRCB/SCCWRP									
San Diego Regional Water Quality Control Board										
RWQCB 9: San Diego Region	R9 staff					1	1	1	1	1
	R9 student contract staff									
	R9 citizen monitors	1				1	1	1	1	1
	CDFG Nimbus--Organics									
	CDFG Nimbus--Conv WQ									
	CDFG/SJSUF--Metals									
	CDFG Nimbus/CSU Chico--ABL Bioassess					1	1	1	1	1
	CDFG/SJSUF--Sample Collection	1	1	1				1	1	
	CDFG/UCD Granite Cyn--Tox Testing									
	CDFG/SJSUF/Applied Mar. Sci.--conv wq									
	CDFG/SJSUF/Sierra Foothills--conv wq									
SWRCB/Division of Water Quality										
DWQ	DWQ SWAMP staff									
	DWQ Clean Water Team staff	1	1			1	1	1	1	1

Table 2f. Summary of SWAMP Laboratory, Administrative, and Technical Reporting Responsibilities for RWQCB 6, 7, 8, 9 and DWQ

Entity for whom service is being conducted	Agency, University, Corporation, or Other Entity conducting service (and showing contract "route" where can)	ANALYTICAL LABORATORY SERVICES								Other services (QA, Data Mgmt, Stats, Interp Rept)
		Org	Metal	Convent	Tox	Benthic	Biolog	Bact/	Sed	
		Chem	Chem	W.Q.	Test	Infauna	Assess	Path	charac	
Lahontan Regional Water Quality Control Board										
RWQCB 6: Lahontan Region	R6 staff			1						1
	R6 student contract staff									
	R6 citizen monitors									
	USGS--Carnelian Bay	1	1	1						1
	SWRCB/UC Santa Barbara-SNARL						1			1
	SWRCB/NEL Lab	1	1	1						
Colorado River Basin Regional Water Quality Control Board	R7 staff							1		1
	R7 student contract staff									
	R7 citizen monitors									
	CDFG Nimbus--Organics	1								
	CDFG Nimbus--Conv WQ			1						
	CDFG/SJSUF--Metals		1							
RWQCB 7: Colorado River Basin Region	CDFG Nimbus/CSU Chico--ABL Bioassess						1			1
	CDFG/SJSUF--Sample Collection									
	CDFG/UCD Granite Cyn--Tox Testing				1					
	CDFG/SJSUF/Applied Mar. Sci.--conv wq			1					1	
	CDFG/SJS/Babcock & Sons, Inc.							1		
	CDFG/SJSUF--Sierra Foothills conv wq			1						
	USGS-San Diego	1	1	1					1	1
	Santa Ana Regional Water Quality Control Board									
RWQCB 8: Santa Ana Region	R8 staff									1
	R8 student contract staff									
	R8 citizen monitors									
	SWRCB/ABC Labs				1	1				
	SWRCB/CRG Labs	1	1	1				1	1	
San Diego Regional Water Quality Control Board										
RWQCB 9: San Diego Region	R9 staff									1
	R9 student contract staff									
	R9 citizen monitors									
	CDFG Nimbus--Organics	1								
	CDFG Nimbus--Conv WQ			1						
	CDFG/SJSUF--Metals		1							
	CDFG Nimbus/CSU Chico--ABL Bioassess						1			
	CDFG/SJSUF--Sample Collection									
	CDFG/UCD Granite Cyn--Tox Testing				1					
DWQ	DWQ SWAMP staff									1
	DWQ Clean Water Team staff			1				1	1	1

Figure 2: State of California's **Surface Water Ambient Monitoring Program ("S.W.A.M.P.")**
Organizational Chart for Primary-Level Responsibilities

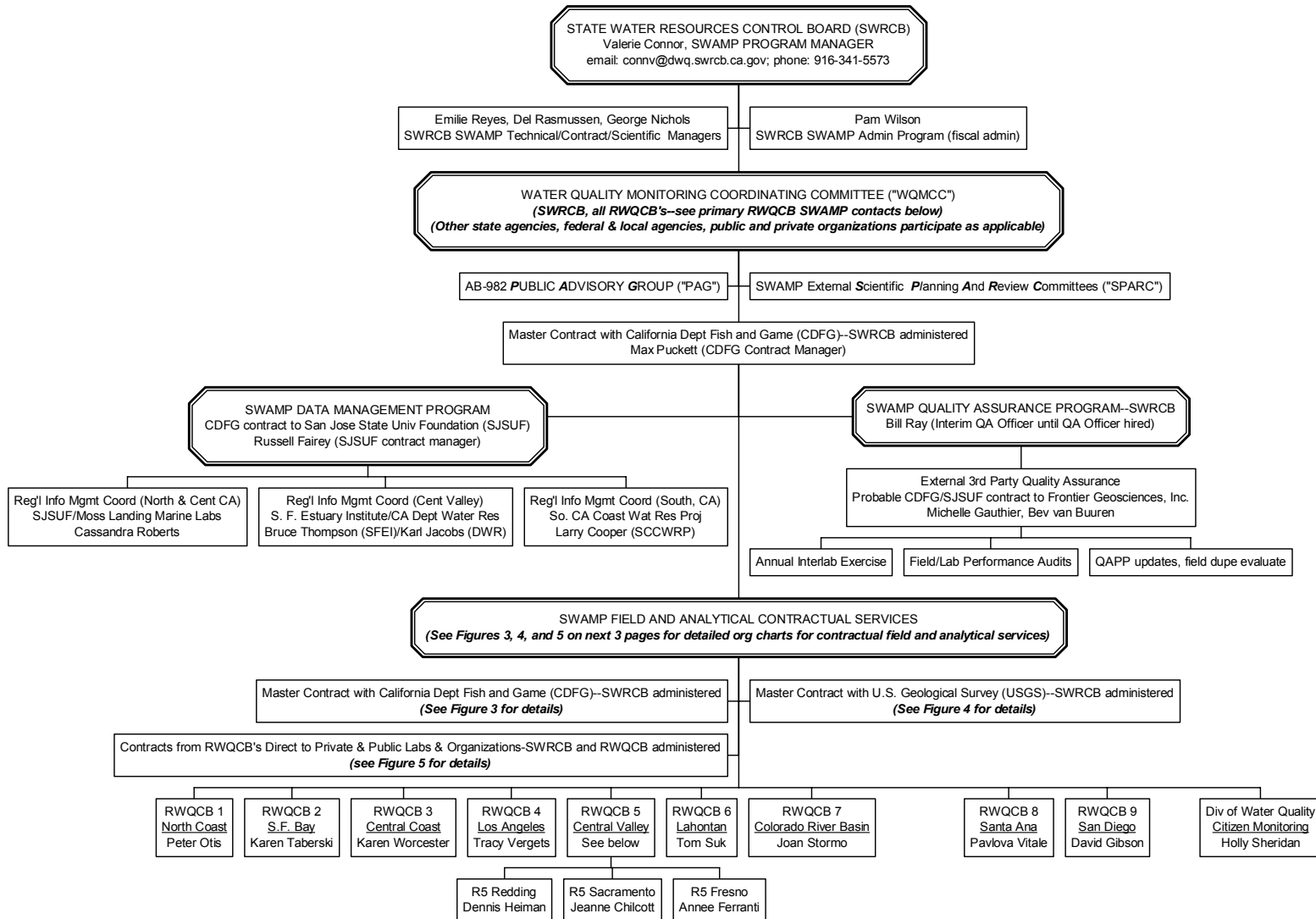
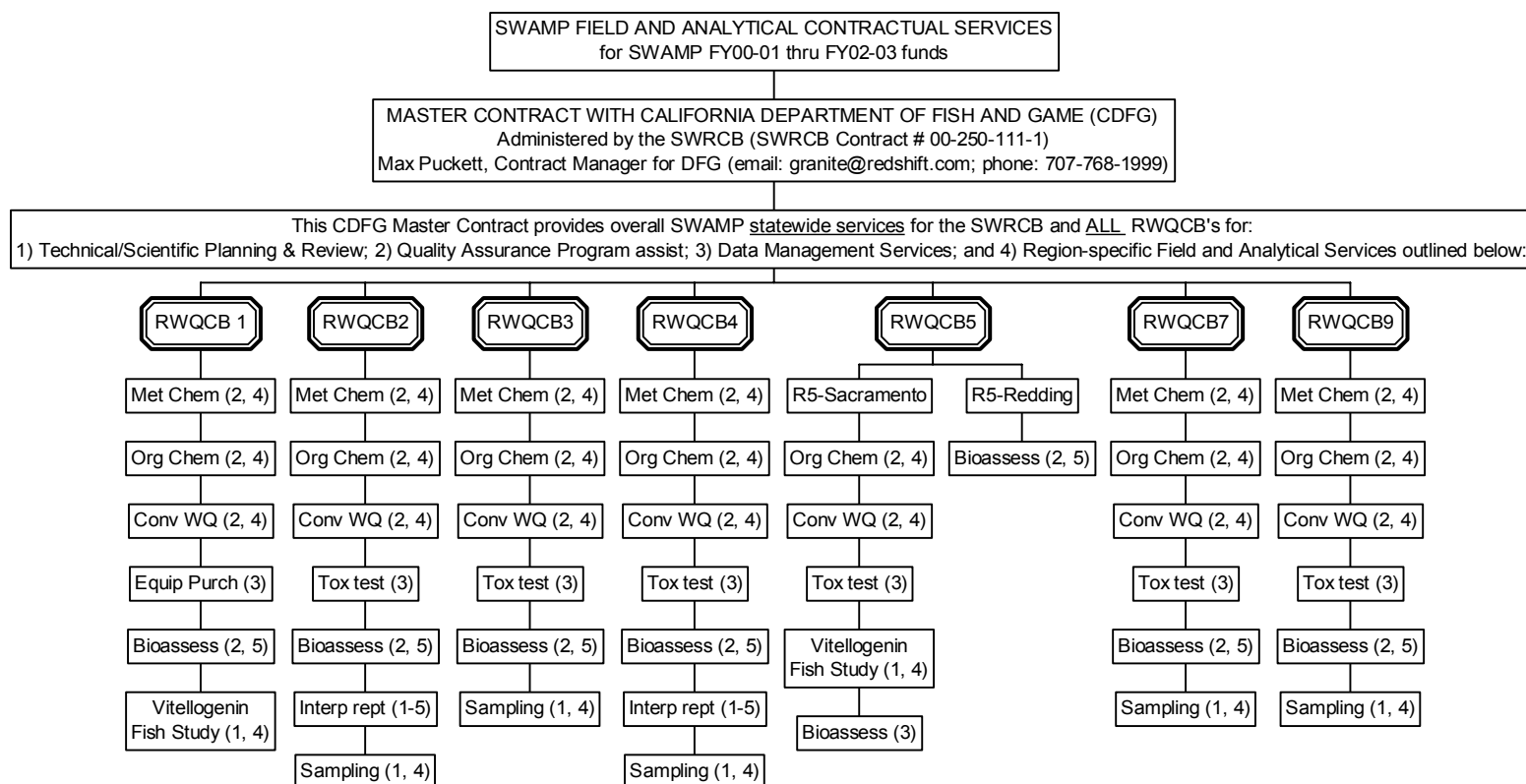


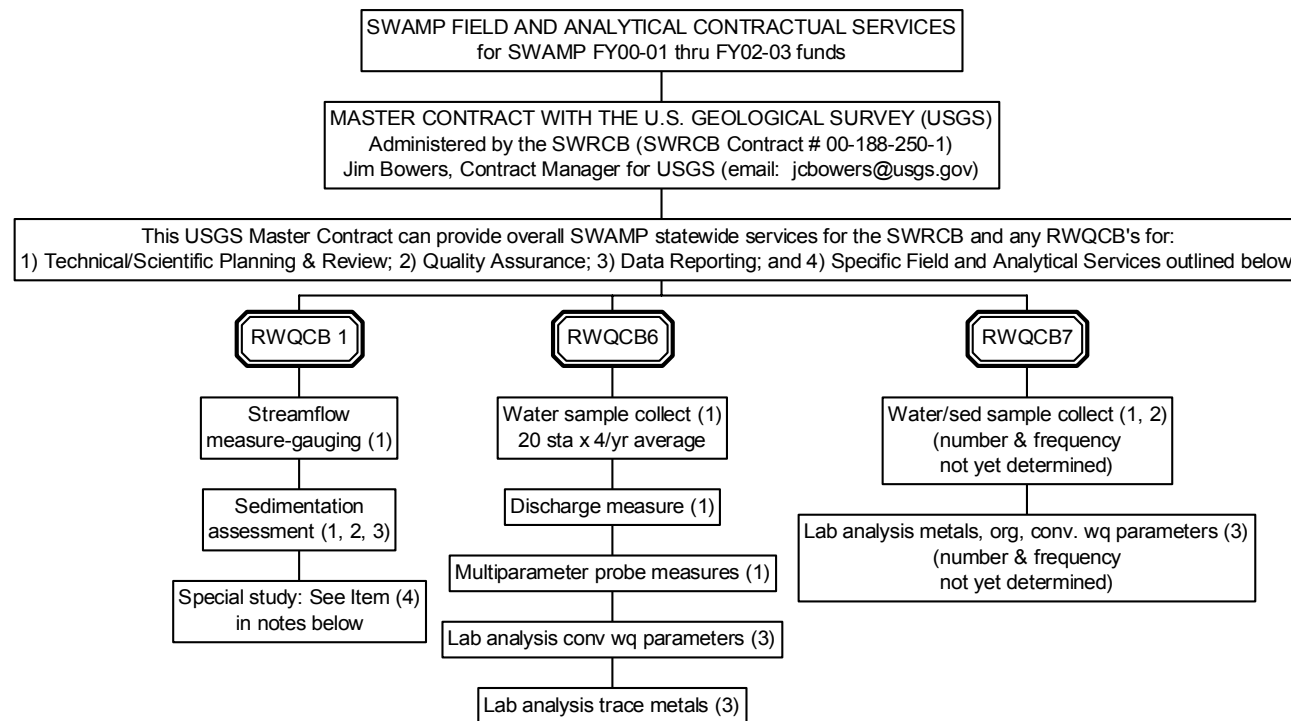
Figure 3. State of California's Surface Water Ambient Monitoring Program ("S.W.A.M.P.")
Details of Organizational Responsibilities for Field and Analytical Services
for the California Department of Fish and Game's Master Contract with the SWRCB



For the master Contract with CDFG, field and analytical services for specific Regional Boards, as listed by number (#) above & below, are provided by the following:

- 1) CDFG Moss Landing: Technical/scientific planning & review; quality assurance program; sample collect logistics & mgmt; contracts mgmt; interp rpts
- 2) CDFG Rancho Cordova/Nimbus: Technical/scientific planning & review; organic chemistry, conventional water quality, aquatic bioassessment; interp rpts
- 3) CDFG contract to UC Davis/Granite Canyon (Env. Tox. Dept.) & Aquatic Tox Lab (Vet Med): Technical/scientific planning & review, toxicity testing, interpretive reports; equipment purchases; vitellogenin fish studies & bioassessment & tox (UCD ATL).
- 4) CDFG contract to San Jose State Univ Fndtn/Moss Landing Marine Labs: Technical /scientific planning & review; statewide data management; trace metal & organic chem, sample collect & processing, sampling logistics & coordination, TSS/SSC, sed TOC, chlor-a; subcontract to Applied Marine Sciences (Houston, TX) for sed grain size, water TOC/DOC; subcontract to Sierra Foothills Lab (Jackson, CA) for boron; subcontract to CLS Labs (Rancho Cordova) for conv wq).
- 5) CDFG contract to California State University, Chico Research Foundation: Biological assessment field and analytical services.

Figure 4. State of California's Surface Water Ambient Monitoring Program ("S.W.A.M.P.")
Details of Organizational Responsibilities for Field and Analytical Services
for the U.S. Geological Survey Master Contract with the SWRCB



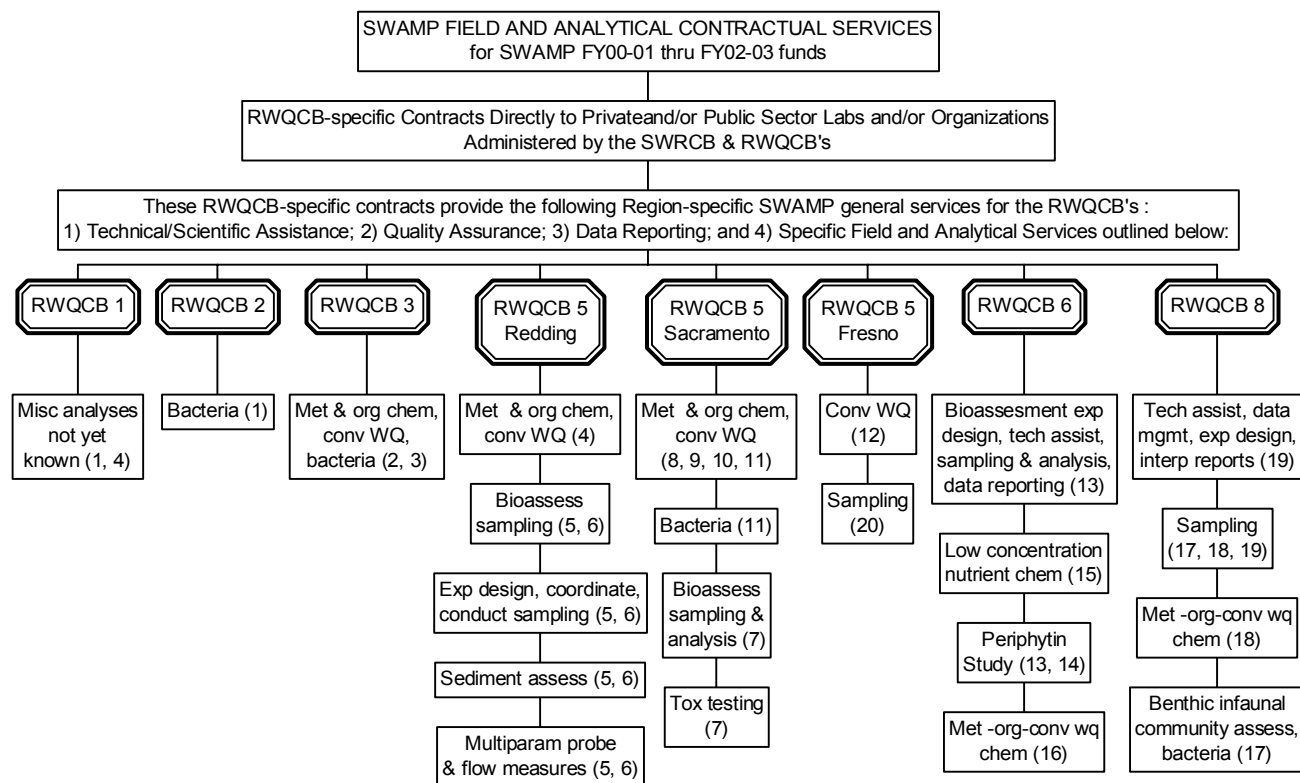
For the master Contract from SWRCB to USGS, the following outlines of field and analytical services are provided to Regional Boards, as shown above:

- 1) Collecting and processing of sediment, and/or water, and/or streamflow (discharge) samples or other materials from California surface waters, including the use of all appropriate QA/QC measures necessary to collect and process samples, as outlined in respective task orders;
- 2) Field sample collection of suspended sediment, bed material, and bedload samples, complete or partial particle-size distributions, routine maintenance and repairs to gage structures and instrumentation, and necessary water quality sampling, as outlined in respective task orders;
- 3) Conduct water quality analytical chemistry on field-collected environmental samples as outlined in respective Task Order;
- 4) Evaluate the Board's water availability methodology of using the rational and drainage area ratio methods at ungaged locations in northern coastal California from San Mateo County to Oregon (North Coast region). These methods are used to estimate selected streamflow characteristics, which are used to evaluate applications to appropriate water. These characteristics include daily streamflow, various monthly and seasonal statistics, mean-annual discharge, and selected flood-frequencies and magnitudes. Quantify the accuracy and bias of the techniques to estimate streamflow statistics, identify regions where they perform relatively well or poorly and identify the combination of factors that may affect their applicability.

Figure 5. State of California's Surface Water Ambient Monitoring Program ("S.W.A.M.P.")

Details of Organizational Responsibilities for Field and Analytical Services

for RWQCB-specific Contracts Direct to Private and/or Public Sector Labs and/or Organizations



1) Sequoia Analytical Labs (R1 & R2)--not thru swamp funds; 2) BC Laboratories, Inc. (R3); 3) Creek Environmental Laboratories, Inc. (R3); 4) Basic Laboratory, Inc. (R5-Redding); 5) Plumas Corporation (R5-Redding); 6) Northern California-Nevada Resource Conservation District (R5-Redding); 7) U.C. Davis Aquatic Toxicology Laboratory (R5-Sacramento); 8) Twining Laboratories, Inc. (R5-Sacramento); 9) Weck Laboratories (R5-Sacramento); 10) South Dakota State University/Olson Biochemical Laboratory (R5-Sacramento); 11) Sierra Foothills Laboratory, Inc. (R5-Sacramento); 12) U.C. Davis Aquatic Limnology Laboratory (R5-Fresno); 13) U.C. Sierra-Nevada Aquatic Resources Laboratory (R6); 14) Subcontract from U.C. SNARL to Professor Dean Blinn, No. Arizona University (R6); 15) High Sierra Water Laboratory, Inc. (R6); 16) Contract Lab (not yet known) (R6); 17) ABC Laboratories, Inc. (R8); 18) CRG Laboratories, Inc. (R8); 19) Southern California Coastal Waters Research Project (R8); 20) County of Madera Public Works Department.